ductors **501** advantageously remain embedded in mounting clip **300** and inaccessible to human contact, even in the event of a vehicular accident.

[0068] FIG. **6** illustrates a series of devices **100** installed onto a jersey wall **601** of a highway **602** in accordance with an outdoor application of an embodiment of the present invention.

[0069] An indoor application of the above described concepts share many of the same features. However, certain design choices are preferably changed, as would be appreciated by one of ordinary skill in the art. For example, in an indoor environment, the clear protective outer shell need not be protective of UV rays. In addition, the base **107** and mounting clip arrangement can be simplified since the risk of being struck by a vehicle is eliminated, and the distribution conductors are likely carrying significantly lower rated voltage and current than the outdoor application described above. Accordingly, the distribution conductors may be incorporated into base **107**, and base **107** can also form a mounting structure to attach the device **100** to an indoor structure such as an office cubicle wall. The distribution conductors also need not protrude downwardly from base **107**. Rather, it is advantageous for the distribution conductors to protrude from the lateral ends of the tube portion **106** such that the devices **100** can easily be chained together.

[0070] FIG. **7** illustrates an indoor system according to an exemplary embodiment of the present invention. A plurality of devices **100** are installed onto the walls of an office cubicle **701**. The devices are connected together. The system also provides a standard AC outlet **702**, and a DC outlet **703**.

[0071] The construction of an exemplary device **100** in accordance with an indoor embodiment will now be described in connection with FIGS. **8-22**. FIG. **8** illustrates four individual lithium ion rechargeable batteries **801** that are connected in series to form a cell string **802**. Each lithium ion rechargeable battery **801** preferably provides approximately 3.7 volts, and 2600 mA. The cell string **802** provides approximately 15.34 volts and 2600 mA. Next, eight cell strings **802** are connected together in parallel, to form a battery pack **901**, as shown in FIG. **9**. The battery pack provides approximately 15.34 volts and 20.8 amps. Alternately, in an outdoor application with a larger device **100**, twenty-four cell strings **802**, each having four battery cells **801**, are connected in parallel to produce a battery pack **901** that has a total voltage of 15.34 volts at 85 amps.

[0072] Assembly of the battery pack is described in further detail in connection with FIGS. **10-12**. As shown in FIGS. **10-12**, a hollow conduit **1001** is provided to form a passageway for conductors **1002**. The hollow conduit **1001** holds battery retainer caps **1003**, through which the conductors **1002** are fed to form electrode contacts for the cell strings **802**. Eight cell strings **802** are arranged around the hollow conduit **1001**, attached to the conductors **1002**, and retained by battery retainer caps **1003**, to form battery pack assembly **1004**. The battery pack assembly **1004** is fitted with plugs **1006** and **1007** attached at either end of the battery pack assembly **1004** for connection to the power out circuit (not shown) and the charging circuit (not shown).

[0073] Referring to FIG. **13**, the assembled battery pack **1004** is inserted into a ceramic housing **1301**, which is shown in cutaway view. The ceramic housing is preferably wrapped in a thermal insulation layer, such as fiberglass (not shown). The battery pack assembly **1004** is connected to the charging circuit **1302** via plug **1007**. The charging circuit **1302** is preferably connected to two sources of energy. First, the charging circuit **1302** is connected to standard 120VAC power for charging the battery pack when ambient light is not sufficient. Second, the charging circuit **1302** is connected to the PV and thermionic modules, as described above. These are the primary means of charging the battery pack.

[0074] Once the battery pack assembly **1004** and the charging circuit **1302** have been installed in the ceramic conduit **1301**, an AC/DC charging and control switch gear **1303** is installed. The AC/DC charging and control switch gear controls the incoming AC or DC charge cycles. The AC/DC charging and control switch gear is preferably held in place within the ceramic conduit **1301** by preformed lips with attachment points corresponding to attachment points on the AC/DC charging and control switch gear circuit board **1303**. Of course, this description is merely exemplary, and those of ordinary skill in the art will recognize a wide variety of well known means for installing a circuit board in a conduit. The AC/DC charging and control switch gear **1303** can include a standard AC wall plug for connection to a standard 120VAC wall outlet.

[0075] The battery package is completed by the addition of ceramic end caps (not shown). One end cap preferably has a center opening for connector plug **1006**. FIG. **14** illustrates the other end cap **1401**, which preferably has louvered openings to facilitate air movement by a fan **1402**. An LED charge status array **1403** preferably includes four LEDs to indicate various conditions. A standard USB port **1404** is also preferably provided.

[0076] The assembled battery pack **1500** is shown in FIG. **15**. The particular application for which the battery pack **1500** is to be used determines the configuration of the external connections. FIG. **16** illustrates a first example, in which the assembled battery pack **1500** is used in an external application, as in the jersey wall application described above. Plug **1006** is connected to a solenoid **1601** of a battery output control circuit board (not shown). When the battery has full charge, the solenoid **1601** closes and connects the battery to the distribution conductors **501**, **502**. As discussed above, various combinations of downwardly projecting conductors **1602**, **1603**, or laterally projecting conductors **1604**, **1605** may be used to connect devices together in parallel or serial connection. A series of devices **1500** connected in serial fashion are shown in FIG. **17**. A series of devices **1500** connected in parallel fashion are shown in FIG. **18**.

[0077] A functional block diagram of an exemplary embodiment of the present invention is illustrated at FIG. **19**. As described above, the device **100** comprises a PV layer **104**, a thermionic layer **103**, and one or more battery banks **1901**. The PV layer **104**, thermionic layer **103**, and the battery banks **1901** are connected to a battery management module **1902**. A DC surge protector **1903** is preferably provided to protect the internal circuits of the device **100**. The battery management module provides DC power to a DC load **1903** via DC-to-DC converter **1904**. Optionally, a system performance meter **1905** tabulates usage of the DC power supply. The battery management module further provides AC power to a load such as a building's main service panel **1906** via the DC-to-AC inverter **1907**, and high efficiency transformer **1908**. Optionally, another system performance meter **1909** tabulates usage of the AC power supply. Preferably, an AC surge protection device **1915** is provided to protect the device from